

The cat was observed teaching her young by putting half killed gerbilles before her kittens. The young were seen attempting to hunt (kill) the injured gerbille. The cat was also seen bringing beetles and eggs of ground birds for her young.

Two young of the cat were seen killed by stray dogs of a nearby village and three young by male cats of the area.

*Enemies.* The jackal (*Canis aureus*), the wolf (*C. lupus*) and the stray dog are enemies of the desert cat. The cat escapes by climbing up a nearby tree or hiding under a thick bush when chased. In agonistic behaviour, it was observed erecting the hairs of its body,

particularly of the tail, and if necessary striking at the mouth and nose of the enemy with its paws in an effort to escape. The cat was observed to be fairly successful in avoiding fatal attacks by dogs by this method. It falls a victim only when encircled by two or more dogs.

The desert cat was found to be a notable factor in controlling the population of the desert gerbilles in the sandy scrub wasteland. There is no serious predator of the cat but its population is restricted by poor breeding success, because of the young being often killed by males of its own species and stray dogs of nearby village areas.

BHAGAWATI BHAVAN,  
RATANADA ROAD,  
JODHPUR 342 020,  
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INDRA KUMAR SHARMA

#### 4. INTER-SPECIFIC RELATIONSHIP IN SOME SPECIES OF INDIAN BATS WITH A NOTE ON BAT FAUNA OF BHUBANESWAR

##### INTRODUCTION

An extensive survey of bats from Bhubaneswar and its vicinity was made by me between 1972 to 1976 for approximately four years, to study their ecology and reproductive biology. Bhubaneswar (20° 30'N, 85° 30'E) is situated near the eastern coast at 45 metres a.s.l. and there is neither extreme cold nor extreme heat. The rainfall ranges between 100 to 200 cm. and the annual temperature ranges from 10.6°C. to 43.3°C. The bats were captured from old temples, caves, old and desert-

ed houses, cowsheds, palm trees, etc.

The present report on inter-specific relationship in some species of Indian bats is an outcome of this survey.

*Taphozous melanopogon* (Emballonuridae) colonies of a few hundred specimens, were seen inhabiting most of the temples at Bhubaneswar, Orissa.

Monthwise collections of *Taphozous melanopogon* was made from Mausima, Bhaskaresvara and Brahmesvara temples for over three years for studying its ecology and reproductive biology (Khaparde 1976)<sup>1</sup>. Frequent collections (several times a month) of *Taphozous melanopogon* were made during the breeding season from the above temples with a view to obtain closely graded stages

<sup>1</sup> KHAPARDE, M. S. (1976): Notes on the breeding habits of the Indian sheath-tailed bat, *Taphozous melanopogon* (Temminck). *J. Bombay nat. Hist. Soc.* 73 (2): 321-324.

of development for embryological studies.

In Meghesvara temple, *Rousettus leschenaulti* (Pteropidae) lives in association with *Taphozous melanopogon* in November, December and January but during collections in February, March, April and May only *Taphozous melanopogon* were captured. Unfortunately, collections during other months of the year could not be made, and hence it is not possible to determine the exact time of migration of *Rousettus leschenaulti* of this temple.

In Rajrani temple, *Rhinopoma kinneari* (Rhinopomatidae) roosts with *Taphozous melanopogon* in November, December, and January but is absent in February, March and April. Collections could not be made during other months of the year.

*Rhinopoma hardwickei hardwickei* (Rhinopomatidae) roosts with *Taphozous melanopogon* in Mausima (Ramesvara) temple. Since, *Rhinopoma hardwickei hardwickei* roosts in small colonies of 20 to 30 specimens, only a few specimens of these could be captured along with the specimens of *Taphozous melanopogon* in a few of the total number of captures. But this does not rule out the possibility of the availability of *Rhinopoma hardwickei hardwickei* in association with *Taphozous melanopogon* in this temple throughout the year. *Taphozous melanopogon* is found in its roosts throughout the year.

In a small temple opposite Mausima temple, a colony of *Rhinopoma hardwickei hardwickei* consisting of 20 to 30 specimens exists.

A large colony of *Rousettus leschenaulti* (Pteropidae) was noted in Jambesvara Temple. *Megaderma* sp. also occurs in temples and the Parasuramesvara temple holds a colony of *Megaderma* sp. were also captured from holes in bamboo in houses made of bamboo from a small village near Bhubaneswar.

*Taphozous melanopogon* (Emballonuridae); *Rhinopoma h. hardwickei* (Rhinopomatidae); *Rhinolophus rouxi* (Rhinolophidae); *Hipposideros speoris* (Hipposideridae) were collected from Rani Gumpah, Udayagiri Hill near Bhubaneswar. *Pteropus* sp. from a colony near Chandani Chowk, in Cuttack, Orissa. *Pipistrellus minus minus* (Vespertilionidae) were collected from huts in Bhubaneswar and *Cynopterus sphinx* (Pteropidae) from palm trees.

It was noted that the large sized bats generally live in colonies of their own species, while the smaller bats live with members of other species also.

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DEPARTMENT OF ZOOLOGY,  
REGIONAL COLLEGE OF EDUCATION,  
BHUBANESWAR 751 007, (ORISSA),  
April 22, 1977.

M. S. KHAPARDE<sup>2</sup>

<sup>2</sup> Present Address: Department of Text books,  
NCERT, NIE Campus, New Delhi 110 016.